

REMARKS

The Applicant thanks the Examiner for acknowledgment of a claim for foreign priority under 35 U.S.C. §119 and receipt of the priority document.

Concurrently filed with this amendment is an information disclosure statement which brings U.S. Patent 4,645,279 to Grabbe to the attention of the Examiner. A written indication of consideration of the Grabbe reference is requested with the notice of allowance or next office action.

By the present amendment, responding to the Examiner's objection, drawings from 4A to 9 have been corrected to add the legends "Related Art". The Applicant respectfully requests to withdraw drawing rejection in a view of the present amendment.

The Examiner also objected the specification for non clear description of the claimed structure. Specifically, on page 5, lines 17 to 21 the specification describes a connection of a module body and a connector in confusing way, "...a second conductive member, provided on the inner side face of the connector, such that the first conductive member is brought into contact with the first conductive member ...".(Emphasis Added) This unclarity on page 5, lines 17 to 21 was corrected by the present amendment. The analogous mistake was corrected in the abstract and in claim 1. Additionally, several minor grammatical errors have been corrected in the specification.

Claim 1 has been amended, and claims 8-11 have been added. The application now includes claims 1-11.

Support for the amendment to claim 1 can best be seen in Figures 2d and 3 wherein where the conductive member 26 extends from an inner side face 26b to an outer side face 26a so as to be connected to an external line at the outer side face.

Support for new claims 8-11 can be found throughout the specification and drawings. In particular. Figure 2a shows that the first and second openings in the top and bottom faces respectively as is set forth in claim 9. A plate 25b shown in Figure 2a, used to reinforce the module when it is accommodated in the connector, is positioned in the bottom face of the connector, as is required in claims 8 and 11.

Figure 3 shows the bottom face of the connector being coplanar with the bottom face of the module body as is set forth in claim 10.

The undersigned thanks the Examiner for an expressed courtesy not issuing a 35 U.S.C. §112 rejection of claim 1 and amends claim 1 in order to replace “first conductive member” with “second conductive member” overcoming a potential 35 U.S.C. §112 rejection.

Claims 1, 2 and 5-7 have been rejected under 35 U.S.C. §102(b) as being anticipated by Kelly, Jr. (U.S. Patent No. 3,701,077). Claims 1, 2, 4, and 5 have been rejected as being anticipated by Elberbaum (U.S. Patent 6,268,882). Claim 3 has been rejected as being obvious over Kelly in view of Hundt (U.S. Patent 5,289,034). These rejections are respectfully traversed in a view of the above amendment and further arguments. Furthermore, as will be discussed below, none of the references of record alone or in combination anticipate or make obvious the new claims 8-11.

The present invention discloses a connector to which a module body such as a memory or camera module is fitted. The proposed by Applicant connector, is able to achieve a thinner space-saving design compared to existing constructions due to a special configuration. In addition, the claimed configuration has an advantage that the force, exerted in the direction of insertion of the module body, is not applied directly to the contact pins, thus reducing a possibility of contact pins damage.

Generally, the claimed connection structure consists of module body 22 (see figures 1A-1D) and connector 25 (shown in figures 2A-2D). Module body 22 has a plurality of contact pads 24 formed at a lower half portion of each of four side faces of the module body 22. Connector 25, to which module body is fitted, is formed with an upwardly-opened chamber 25a. Side portions of a bottom 25b of the chamber 25a is suitably notched to form openings 25c, and a plurality of parallel contact pins 26 are provided on an inner side wall of the chamber 25a. Bottom part 25b of the connector 25 can be removed and a connection structure can be reduced in thickness by an amount corresponding to the thickness of the removed bottom 25b. Each of the contact pins 26 is bent into a generally inverted V-shape and

secured to the inner side wall of the chamber 25a. One end portion of the contact pin 26 is formed into a terminal 26a which is exposed to the outer side face of the connector, and is bent outwardly horizontally so as to be electrically connected with, for example, a circuit formed on a wiring board on which the connector 25 is mounted. The opposite end of the contact pin 26b is bent to project inwardly to form a contact projection 26b for contact with the associated contact pad 24 of the module body 22. When module body 22 is inserted into the chamber 25a from the upper side of the connector 25, the contact pads 24 are brought into press-contact with the contact projections 26b of the contact pins 26 establishing electrical contact.

The reference to Kelly, Jr. discloses a socket for electronic components having a housing of electrical insulating material and a plurality of electrical contact members with spring portion for providing a contact surface for contacting the leads of the electronic component at a point along the length of the lead, when component is inserted into the socket through its opened end. The structure proposed by Kelly, Jr. aims to improve a reliability of socket, providing an improved electronic component with parallel leads. A connector shown by Kelly, Jr. includes an electronic component 10 with two sets of leads 16, 18, spaced apart from one another, each set having its leads arranged substantially in parallel, with the sets extending along opposite sides of the package and making an angle of about 0 to 30 with one another. The socket 30 includes two sets of contact members 62, 58 defining two sets of contact surfaces each set having its contact surfaces arranged in a single plane and spaced apart from one another by a distance less than the distance between the sets of leads on the electronic component 10.

The reference to Elberbaum discloses a television camera apparatus for surveillance application. The Examiner specifically refers to Figure 9A, wherein a connection of base assembly 61 to camera holder 5 is shown. The base assembly 61 includes an electrical contact 4A for propagating power, control, video and other signals to the electrical contacts of the camera holder 5, a pair of holder hooks 3A for locking the camera holder 5 into the base assembly 61 and two studs 3C for bolting the camera holder 5 into the base assembly. The base assembly also has

four studs 61C for fastening the circular cover 69 onto the rim of the base plate 61 by four screws 69S. The base assembly 61 is attached to the shell 67 by four screws 61P through mounting holes 61D which are complementary to four studs 67D of the shell 67. The camera holder 5 includes a set of electrical contacts 4B, a set of protruding convexes 5A to which the holder hooks 3A are locked when the camera holder 5 is attached to the base assembly 61 and dual arms 5D for bolting the camera holder 5 onto the studs 3C of the base assembly 61.

Amended Claim 1

The references cited do not disclose the feature “wherein the second conductive member is extended from the inner side face to the outer side face so as to be connected to an external line at the outer side face”.

Kelly discloses the external line (34) and the second conductive member (58) are connected at the bottom surface of the connector.

Elberbaum does not disclose the second conductive member (4A) and the external line being connected at the outer side face.

Newly cited U.S. Patent 4,645,279 to Grabbe discloses the external line (82) connected at the bottom surface of the connector in Figure 6.

In view of the above, claim 1 is not anticipated by any of the references of record. Furthermore, because Hundt does not make up for the deficiency (and no other reference of record makes up for the deficiencies) of the three above-referenced patents, no combinations of cited references would make claim 1 and any of its dependent claims, including particularly dependent claim 3, obvious.

New Claim 9 and its dependent claims

The references do not disclose the feature “wherein the first opening has a same shape as the second opening”.

Regarding Kelly, the first opening provided in the top of the connector has a different shape from the second opening (70) provided on the bottom of the connector. Likewise, regarding Grabbe and Elberbaum do not show or suggest this feature. Moreover, none of the references of record show a device as defined in claim 9 with a “plate attached to the bottom face of the connector so as to reinforce the module accommodated in the chamber” or show the “bottom face of the

connector is coplanar with the bottom face of the module body”.

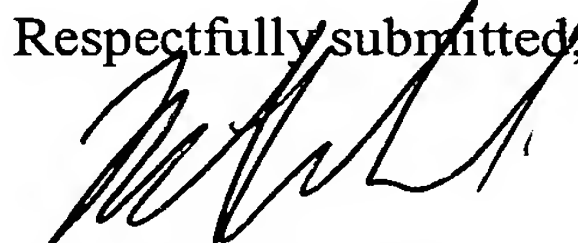
The prior art cited but not relied on by the Examiner has been reviewed but for the reasons mentioned above this prior art is not relevant to the invention as presently claimed.

In view of the foregoing, it is respectfully requested that the application be reconsidered, that claims 1-11 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

A provisional petition is hereby made for any extension of time necessary for the continued pendency during the life of this application. Please charge any fees for such provisional petition and any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041 (Whitham, Curtis & Christofferson, P.C.).

Respectfully submitted,



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